Issues (Peer Review+Backlook)

1. Principle 1 - Line Management Responsibility for Safety:
Line management is directly responsible for the protection of the public, the workers, and the environment.

Definition of roles and responsibilities, a sense of accountability, training and guidance, as well as performance expectations for line managers (PIs and Supervisors) with respect to safety management, maintenance of work place safety, and commitment to safe work activities are less than adequate.

1.1. There are indications that line management including the PIs generally understand their responsibilities for the safety of their employees and operations. However, there appears to be weaknesses in execution of their responsibility.

- PIs do not appear to be well trained/prepared for their line management responsibilities.
- Middle and first line managers and supervisors need to be supported in doing work safely.
- The span of control for a PI can exceed what is easily manageable making it even more difficult to monitor their spaces and activities.
- Span of control (excessive) does not allow responsible safety management.
- Safety management is not a high priority for many PIs.
- Underlying/latent cause of LTA line management implementation of work place safety: proactive involvement – major changes required that go well beyond increased frequency of walk throughs.
- Practicing the 5 Core Functions of ISM at the activity level all the time is LTA
- Presence of senior management walking the work area is spotty. The senior management walk-arounds of the work area varies from once a year to twice a day. The institutional expectation is that senior managers inspect all of their staff workspaces annually, which is insufficient oversight for many work activities. Discussions with the workforce confirm the positive impact the presence of senior management in the laboratories has in reinforcing the premise that management is interested in them and their safety.
- Management's communication of issues related to safety to the rank and file is not effective.
- Formal communications designed to make ISM real for workers and researchers are LTA.
- Based upon a random sampling of performance review documents (PRDs), the majority of the comments regarding performance in the area of ES&H were perfunctory and contained little qualitative measure of performance.

- Relationship between PI and post doctoral and graduate student staff deters identification of safety issues and implementation of work place safety.
- Not all PIs are equal with respect to responsibility for and performance of safety management.
- Who is a line manager? PD is not consistent across the Laboratory.

Principle 2 - Clear Roles and Responsibilities:
Clear and unambiguous lines of authority and responsibility for ensuring safety shall be established and maintained at all organizational levels within the department and its contractors.

2.1 It is not clear how senior management is assured of an independent review of ES&H programs and work activities within divisions. EH&S assurance mechanisms are ineffective.

- In the crafts at LBNL, work observations and inspections are sometimes perceived as punitive and therefore actively resisted.
- Relationship between PI and post doctoral and graduate student staff deters identification of safety issues and implementation of work place safety.
- Documentation provided by division ISM plans and division self-assessment plans reflect an uneven consideration of safety from one division to another.
- LTA feedback for improvement systems – IFA, SA, MESH
  - Scope
  - CRADs
  - Ongoing/periodic/multidirectional views
- EH&S Division is not adequately consulted when (renovated or new) facilities are planned.
- Change control LTA in highly matrixed organizations and/or tasks
- The role of the safety coordinator varies across LBNL.
- Not all PIs are equal with respect to responsibility for and performance of safety management.
- Work Authorizations: Roles and responsibilities not clearly communicated.
- Expectation to use and follow procedures LTA
- Who is a line manager? PD is not consistent across the Laboratory.
- EH&S oversight is ineffective
  - Supervision of matrixed EH&S staff is LTA
  - Roles and responsibilities of EH&S staff with respect to to other divisions (i.e., liaisons, coordinators) is LTA
  - Distinction between user model vs. traditional model is not clear.
  - Clarity of role of EH&S and line in safety management LTA.
  - EH&S oversight is to decentralized
  - Potential conflict of interest for EH&S staff between safety and programmatic goals.

2.2 Lack of stability in the EH&S division management has created the atmosphere that work in the division is not understood or appreciated.

- There have been three division leaders in three years.

2.3 Some workers may view statements like "Each employee is responsible for his or her own safety" and "Unsafe behavior is antisocial behavior" as a way to assign blame to the worker in the event of an accident.

- This is not an idle concern. In our own institutions and in the news we have all observed blame and punishment put on workers involved in accidents that "were waiting to happen" because of working conditions or de facto accepted work practices.
- Some LBNL workers expressed feeling trapped by this responsibility because they have no effective way to change unsafe working conditions or practices.

3. Principle 3 - Competence Commensurate with Responsibilities:
Personnel shall possess the experience, knowledge, skills, and abilities that are necessary to discharge their responsibilities.

3.1. There is not a uniform, laboratory-wide way to educate leaders, managers, and supervisors on how to make safety an integrated part of the activities in the workplace.

- It is not clear that all line mangers are trained to conduct meaningful safety walk-arounds.
- The role of the safety coordinator varies across LBNL.
- The minimum qualifications and training of safety coordinators should be determined and formalized.
  - Safety coordinators are the primary implementers of the LBNL safety program, and some evidence indicates that the quality of the safety program is directly related to the quality of the safety coordinator.
  - There are only two required courses for safety coordinators and no other qualifications have been formalized.
  - Safety coordinators are the "gatekeepers" to the involvement of ES&H subject matter experts (SMEs).

3.2. Work pressures could be driving people to work in less safe ways, causing mistakes, or creating stressed personal interactions.

- In the absence of information, assumptions are being made regarding the relative value of the work being done resulting in risk acceptance that may not be what is intended.

- Some employees suggested that supervisors had to approve their time away from work to attend counseling sessions, thus making it known that they were attending these sessions.

3.3. Causal analysis is inconsistently applied and may not result in corrective actions that will prevent reoccurrence.

- Root cause determination is only required for serious incidents.
- The root cause analyses performed for the 15 electrical incidents and the 50 OSHA recordable cases did not result in any formal corrective or preventive actions.
- It was not apparent that corrective actions for lower level incidents are tracked to closure.
- Technical people without causal analysis expertise lead root cause analyses.

4. Principle 4 - Balanced Priorities:
Resources shall be effectively allocated to address safety, programmatic, and operational considerations. Protecting the public, the workers, and the environment shall be a priority whenever activities are planned and performed.

4.1. Even though there is a very proactive approach in many elements of LBNL, the wide spread perception is that the Laboratory is in a very reactive posture with respect to ES&H.

- Significant portions of the staff believe that improvements do not occur unless there is a serious problem. Interviews with supervisory and non-supervisory employees disclosed their concern that "someone had to get hurt" before a safety problem would get fixed.
- Middle and first line managers and supervisors need to be supported in doing work safely.
- Lack of management support of staff when safety issues are identified
- Staffing in many support groups has dropped below levels that allow high quality support.
- Insufficient resources for safety
- Employees see safety as a lower priority to "production" because of cuts in safety staff and safety issues that remain unfixed.
- Risk taking is recognized, tolerated, and encouraged by workers, supervisors, coworkers, guests, and students. Situation aggravated during RIF and facility and/or users outgrowing static safety resources.
- People will take safety risks to get the job done in order to retain project funding.
- ES&H-type employees described their inability to provide adequate coverage because of the lack of staff.
- The professional safety staff currently has no time to participate with the scientific staff in the planning of new experiments or facilities. Safety and the

minimization of hazardous waste generation is thus reduced to an after thought rather than designed in from the beginning.

- LTA change management control of work control process when scope, resources, personnel, schedule change.

4.2. The excessive focus on the DART and TRC rates has negatively impacted the safety program.

- The employees fear that any reported accident will have serious implications for LBNL, their division, their laboratory and possibly their job. The loss of this accident information has negatively impacted the Laboratory's safety leading indicator program and thus the ability to implement programs specific to correcting deficiencies in the current program.
- The need for upper management review of all injuries produces an underground mentality because of the concern employees have with the use of the information. This would not be a problem if employees trusted the management to use the information to truly improve safety.

4.3. Mentoring of leadership PIs on operational issues does not get the same attention as the technical issues and the span of control for these leaders makes their jobs excessively challenging. Span of control does not allow responsible safety management

- PRDs are thorough for technical work content and superficial on operations.
- Potential conflict between the culture of research and everything else – PIs see rewards in doing everything else.
- PIs can have as many as 30-50 people in a research group.
- Division directors can have as many as 70 PIs in as many as 16 facilities in addition to his/her own research group.
- The span of control for many leaders is beyond what can be expected to produce good results. Leaders are driven to choose between safety activities and schedule. When time is an issue, product and schedule are seen as more important than safety expectations.

5. Principle 5 - Identification of Safety Standards and Requirements:
Before work is performed, the associated hazards shall be evaluated and an agreed-upon set of safety standards and requirements shall be established which, if properly implemented, will provide adequate assurance that the public, the workers, and the environment are protected from adverse consequences.

5.1. It is not clear that activity hazards that are below the threshold or not the primary subject for Activity Hazard Descriptions (AHDs) are adequately analyzed and controlled.

- We observed a laser experiment that had an AHD that addressed the laser hazards but did not address the high voltage, toxic gas, and chemical hazards.

5.2. Subcontractors seem to be held to a lower safety standard.

- For the sake of contract worker's safety, the reputation of LBNL, and the morale of LBNL craft employees, it is important to "level the playing field" regarding ES&H implementation rigor at LBNL. Holding subcontractors to a lower standard or simply not enforcing the standards has several negative impacts:
  - It undermines credibility of active program.
  - It makes on-site crafts uncompetitive.
  - It introduces hazards in unacceptable way.

5.3. Work Planning: The work authorization process is not well suited to project/maintenance type work.

- The building 58 electrical incident could have been prevented if a more thorough hazard identification process was used.
- The "Project Report" for this incident is not a "worker-friendly" format and is not comprehensive.
- The "Task Hazard Analysis" form used by maintenance workers was perceived by ~30% of the group as protecting the LBNL from lawsuits, not protecting them.

6. Principle 6 - Hazard Controls Tailored to Work Being Performed: Administrative and engineering controls to prevent and mitigate hazards shall be tailored to the work being performed and associated hazards.

6.1. Safety is not a multi-layered redundant consideration in all divisions: some hazard controls do not allow for human error.

- Some controls seem to be based on the premise that no human error will occur. This places unreasonable expectations on the workers and sets them up for failure.
- For example, critical administrative controls at the ALS depend on operator memory and/or logbook entry. A requirement to tag a safety system key with the reason(s) for a lock-out is a simple "operator aid" that provides backup for the operator. It also places the information where and when it is needed, a useful concept.

6.2. The recent series of shielding control incidents at the ALS indicates that administrative control of shielding and interlock systems is not adequate.

- At the ALS, radiation protection depends almost entirely on interlocks and configuration control of shielding.
- The January 2006 report by the LBNL Radiation Safety Committee (RSC) documents lapses in the control of the shielding and interlocks.
- Procedures are too complex/process is too involved; leads to work arounds.
- The RSC report provided a comprehensive review of the problems that led to these lapses and put forth recommended solutions.
- A majority of the report recommendations are prescriptive in nature. However, as good management practice, the actions needed to correct the deficiencies must be devised and owned by ALS and LBNL line management.
- The varied and constantly changing research activities at light source facilities require robust administrative controls to ensure safety.

6.3. Facility Inspection program is variable in frequency and effectiveness and is not identifying and correcting hazards in a timely fashion.

- The Director's walk-through identified poor housekeeping, outdated safety contact lists, water leaks and other concerns that indicated a potential for creating a serious hazard. This resulted in a shutdown of the individual PI's laboratories.
- The requirement for formal facility inspection as part off the S/A is just once per year.
- The inspection protocols do not require involvement of PIs or appropriate SMEs.

6.4. Recent inspections and reviews have identified shortcomings in laser safety.

- About a year ago a DOE directive was issued identifying laser issues system wide. In late 2005, a DOE verification of the LBNL response to these issues turned up problems in laser inventory and interlock controls. An action plan to correct these discrepancies is due for completion on April 17, 2006.
- During the last several years, responsibility for laser safety was moved to Occupational Safety, then to Radiation Protection, and in 2006, back to Industrial Hygiene. The Laser Safety Officer recently resigned and a search is underway for a replacement. In the meantime, individuals on loan from other institutions have filled this function.
- The use of lasers at LBNL is widespread, in a variety of settings and with many different types of lasers.

7. Principle 7 - Operations Authorization:
The conditions and requirements to be satisfied for operations to be initiated and conducted shall be clearly established and agreed upon.

7.1. The Lab-wide work control program is LTA. It should cover activities, work, and facilities from the individual to the institution and from the lower hazards to the highest.

- Formal work control including planning and permitting provides a means for including ES&H controls in all routine maintenance and other work that supports the LBNL mission. This is safety integration at a basic level.
- Work control enhances proactive resolution of ES&H and work coordination issues in an environment of complex laboratory activities.
- Safe work authorization (Chapter 6 of Publication 3000) is a necessary program but is initiated only after ES&H issues have been identified and hence is not at the basic level of integrated safety management.
- A uniform work control program could be used at the division level for in-house and outside contractor work.

7.2. The requirement to keep the AHD personnel list current is not clear

- Personnel lists in the AHDs are not all current and some PIs were not clear what the requirement was.

8. Other

A few of the Issues identified did not lend themselves to inclusion in the principles list but are captured here.

8.1 There are no ES&H performance measures or performance metrics that can be considered "leading indicators" for each division.

Discussion

- What gets measured gets done. Performance metrics tied to safety processes help define ES&H expectations and can lead to better overall ES&H performance.
- Choosing appropriate leading indicator metrics is not intuitive.

8.2 The SA process may not be serving the intended purpose.

Discussion

- Division SA content/formality varies widely.
- Division SA roll-up may not be telling management what they need to know. Evaluation criteria need more senior management attention and strategic focus.
- The SA evaluation criteria development process is not aligned with LBNL strategic objectives.

- Integrated Functional Appraisals (IFAs) by SMEs are vertical reviews as are Management of Environment, Safety, and Health (MESH) reviews; there is no process to focus independently on a program across the Laboratory (horizontal).

8.3 Individuals at BSO believe that the Laboratory only shares information it has to and does not trust the DOE (site office, HQ, etc.).

Discussion

- The BSO notes very late notifications.
- LBNL does not give the BSO information it needs to support the LBNL.
- This reinforces feeling of distrust (both DOE and LBNL).